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10/826,179	04/16/2004	Mi Jung Yang	5895P056	9770

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EXAMINER	
MAHMOUDZADEH, NIMA	

ART UNIT	PAPER NUMBER
2419	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/826,179	YANG ET AL.	
	Examiner	Art Unit	
	NIMA MAHMOUDZADEH	2419	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 January 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6 and 8-10* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6 and 8-10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. Applicant's amendment filed 01/26/2009 has been entered. Claims 1-6 and 8-10 are still pending in this application.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1-6 and 8- 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zhang et al. (US Patent Publication No. 2003/0028641) in view of Khurana et al. (US Patent Publication No. 2004/0028054) further in view of Suzuki et al. (US Patent Publication No. 2001/0055314) .

Regarding claim 1, (Currently Amended) Zhang et al. teach a method of performing adaptive connection admission control in consideration of input call states in a Differentiated Services (DiffServ) network (Paragraph [0002], discloses a bandwidth broker performing various QoS management functions), the DiffServ network including a bandwidth broker, a plurality of ingress and egress edge nodes and a plurality of core nodes (Paragraph [0002] and also, see Fig. 1, elements 16, 12, and 14), but fail to explicitly teach the method comprising the steps of:

a) a corresponding ingress edge node (Fig. 1, element 14 is an edge node) performing connection admission control for a new connection within an amount of bandwidth initially allocated to each of paths between the ingress and egress edge nodes;

b) the corresponding ingress edge node comparing an amount of remaining bandwidth allocated to a specific path Pr with an amount of bandwidth required for a connection setup requesting call input to the corresponding ingress edge node, and calculating an amount of additional bandwidth to be requested from the bandwidth broker when the corresponding ingress edge node determines that the amount of the remaining bandwidth does not satisfy the amount of the bandwidth required for the connection setup requesting call; and

c) the corresponding ingress edge node requesting additional bandwidth from the bandwidth broker on the basis of the calculated amount of the additional bandwidth, changing bandwidth information of the corresponding path Pr, and performing

connection admission control. However, Khurana et al. teach the method comprising the steps of:

a) a corresponding ingress edge node (Fig. 1, element 122) performing connection admission control for a new connection within an amount of bandwidth initially allocated to each of paths between the ingress and egress edge nodes (Fig. 1, element 122, link L1);

b) the corresponding ingress edge node comparing an amount of remaining bandwidth allocated to a specific path Pr with an amount of bandwidth required for a connection setup requesting call input to the corresponding ingress edge node (Paragraph [0011], discloses the aggregation of the bandwidth for the new request when there is insufficient bandwidth to support the request), and calculating an amount of additional bandwidth to be requested from the bandwidth broker when the corresponding ingress edge node determines that the amount of the remaining bandwidth does not satisfy the amount of the bandwidth required for the connection setup requesting call (Paragraph [0012], provisioning system maintains the global view of the network and manages the allocation of the path's bandwidth); and

c) the corresponding ingress edge node requesting additional bandwidth from the bandwidth broker on the basis of the calculated amount of the additional bandwidth, changing bandwidth information of the corresponding path Pr, and performing connection admission control (Paragraphs [0011], [0012], and [0013]), but fail to disclose wherein the calculated amount takes into account an average of time intervals at which allocation of additional bandwidth is requested from the bandwidth broker.

However, Suzuki et al. teach wherein the calculated amount takes into account an average of time intervals at which allocation of additional bandwidth is requested from the bandwidth broker (See Fig. 1A. Also, paragraph [0069], discloses When the network unit 18 cannot decide the increase in the number of the cell slots at the end of the frame after increasing the necessary bandwidth of the network termination, it makes the decision on the cell slots at the end of the next frame. Accordingly, the average time from the increase in the necessary bandwidth of the network termination to the decision of the increase in the number of cell slots by the network unit 18 is 1.0 frame time when K=100 and L=50).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of Zhang et al. to include the bandwidth aggregation disclosed by Khurana et al. in order to improve the quality of service for in the communication network.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of Zhang et al. in view of Khurana et al. to include the average timing of the additional bandwidth taught by Suzuki et al. in order to reduce the delay and improve the precision of the communication network.

Regarding claim 2, (Original) Zhang et al. in view of Khurana et al. further in view of Suzuki et al. teach the adaptive connection admission control method according to claim 1, further comprising the step of d) decreasing the amount of additionally allocated bandwidth when the amount of the additionally allocated bandwidth is not exhausted within a certain range, and returning the decreased amount of the

additionally allocated bandwidth to the bandwidth broker (Paragraphs [0013], [0015] the provisioning system of Khurana et al. borrows back the excess bandwidth in an amount equal to the deficiencies).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of Zhang et al. to include the bandwidth aggregation disclosed by Khurana et al. in order to improve the quality of service for in the communication network.

Regarding claim 3, (Original) Zhang et al. in view of Khurana et al. further in view of Suzuki et al. teach the adaptive connection admission control method according to claim 2, wherein the step d) comprises the steps of:

comparing an amount of bandwidth UBWi being used at current time Ti of the amount of the additionally allocated bandwidth with an amount of bandwidth UBWi-1 actually used at previous time Ti-l (Paragraphs [0013], [0014] and [0015] the provisioning system of Khurana et al. borrows back the excess bandwidth in an amount equal to the deficiencies); and

decreasing an amount of currently available bandwidth BWi of the corresponding path Pr when a difference between the amount of the bandwidth UBWi and the amount of the bandwidth UBWi.t is equal to or greater than a preset threshold (Paragraphs [0013], [0014] and [0015] the provisioning system of Khurana et al. borrows back the excess bandwidth in an amount that is needed).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of Zhang et al. to include the

bandwidth aggregation disclosed by Khurana et al. in order to improve the quality of service for in the communication network.

Regarding claim 4, (Original) Zhang et al. in view of Khurana et al. further in view of Suzuki et al. teach the adaptive connection admission control method according to claim 3, wherein the amount of the currently available bandwidth BWi of the corresponding path Pr is decreased to the amount of the bandwidth UBWi.1 actually used at the previous time Ti-1 (See paragraphs [0013], [0014], and [0015] of Khurana et al.).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of Zhang et al. to include the bandwidth aggregation disclosed by Khurana et al. in order to improve the quality of service for in the communication network.

Regarding claim 5, (Original) Zhang et al. in view of Khurana et al. further in view of Suzuki et al. teach the adaptive connection admission control method according to claim 2, further comprising the step of the bandwidth broker withdrawing the decreased amount of the additionally allocated bandwidth and allocating the decreased amount of the additionally allocated bandwidth to another path (See paragraphs [0013], [0014], and [0015] of Khurana et al.).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of Zhang et al. to include the bandwidth aggregation disclosed by Khurana et al. in order to improve the quality of service for in the communication network.

Regarding claim 6, (Original) Zhang et al. in view of Khurana et al. further in view of Suzuki et al. teach the adaptive connection admission control method according to claim 1, wherein the step a) comprises the steps of:

determining each of paths between the ingress and egress edge nodes within the DiffServ network using a routing protocol (Paragraph [0005] of Khurana et al. discloses utilization of MPLS which is a multilayer switch using routing tables in the process. Also see paragraph [0008]) ;

the bandwidth broker determining an amount of initial bandwidth for each path and reporting the determined amount of the initial bandwidth for each path to the ingress edge node (Paragraph [0011] of Khurana et al. ,bandwidth is allocated initially);

selecting the path Pr using a destination address when the call requesting new connection setup is input to the ingress edge node (Paragraph [0011] of Khurana et al. discloses the new call request and also, Fig. 1, discloses the destination unit which is interconnected with routers that utilize routing tables); and

accepting the connection setup request when the amount of the remaining bandwidth, which is allocated to the selected path Pr and is currently available, is greater than the amount of the bandwidth required for the connection setup requesting call (Paragraph [0009] of Khurana et al.).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of Zhang et al. to include the bandwidth aggregation disclosed by Khurana et al. in order to improve the quality of service for in the communication network.

Claim 7, (Cancelled)

Regarding claim 8, (Previously Presented) Zhang et al. in view of Khurana et al. further in view of Suzuki et al. teach the adaptive connection admission control method according to claim 1, wherein the step b) is performed so that, when the amount of the remaining bandwidth satisfies the amount of the bandwidth required for the connection setup requesting call, the bandwidth information of the corresponding path Pr is changed (In Paragraph [0009] of Khurana et al. policing is done by the network provisioning system) as expressed in the following Equation.

changed bandwidth information of Pr = amount of remaining bandwidth of Pr - amount of bandwidth required for new call (In Paragraph [0009] of Khurana et al.)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of Zhang et al. to include the bandwidth aggregation disclosed by Khurana et al. in order to improve the quality of service for in the communication network.

Regarding claim 9, (Original) Zhang et al. in view of Khurana et al. further in view of Suzuki et al. teach the adaptive connection admission control method according to claim 1, wherein the step c) comprises the steps of:

the ingress edge node requesting the bandwidth broker to allocate the additional bandwidth predicted depending on the state of the input call (In paragraph [0011] of Khurana et al. dynamic bandwidth reallocation is done when one or more paths have insufficient bandwidth);

the bandwidth broker receiving the request, determining whether to accept the request for the allocation of the additional bandwidth depending on states of links through which the corresponding path Pr passes (Paragraph [0013] of Khurana et al.);

the ingress edge node receiving a response to the request for the allocation of the additional bandwidth from the bandwidth broker and determining whether allocation of the additional bandwidth succeeds (Paragraph [0013] of Khurana et al. indicated the response to the bandwidth reallocation caused by the call request); and

rejecting the connection setup request if the allocation of the additional bandwidth fails (In paragraph [0028] of Khurana et al. the call request is rejected if there is insufficient bandwidth to satisfy the request), while changing the bandwidth information of the corresponding path Pr and accepting the connection setup request if the allocation of the additional bandwidth succeeds (Paragraph [0013] of Khurana et al.).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of Zhang et al. to include the bandwidth aggregation disclosed by Khurana et al. in order to improve the quality of service for in the communication network.

Regarding claim 10, (Previously Presented) Zhang et al. in view of Khurana et al. further in view of Suzuki et al. teach the adaptive connection admission control method according to claim 9, wherein the bandwidth information of the corresponding path Pr is changed as expressed in the following equation.

changed bandwidth information of Pr = (amount of remaining bandwidth of Pr+M') - amount of bandwidth required for new call (Paragraph [0013] of Khurana et al. ,as additional customer service requests for a given path are received, the provisioning system compares the requested bandwidth for each traffic class to the bandwidth available in each class)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of Zhang et al. to include the bandwidth aggregation disclosed by Khurana et al. in order to improve the quality of service for in the communication network.

Response to Arguments

5. Applicant's arguments with respect to claims 1-6 and 8-10 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to NIMA MAHMOUDZADEH whose telephone number is (571)270-3527. The examiner can normally be reached on Monday - Friday, 8am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chirag G. Shah can be reached on (571) 272-3144. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/NIMA MAHMOUDZADEH/

Examiner, Art Unit 2419

/Gregory B Sefcheck/
Primary Examiner, Art Unit 2419
5-8-2009